Development Environment for Cross Platform Web Applications

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• Current Situation:

- Standard software language and applicable training lacking

- Standard software development tool needed

- Need for portability of application to work on any platform

- Multiple platforms currently in use with vulnerable security setup and software maintenance

- Web Hosting security is also vulnerable and at risk to hackers

•Issues:

- •Without a standard software language, exchange of code and providing training become an obstacle

- •Without a standard software development tool it is difficult to share expertise, increase productivity and provide training

- •Applications need to be portable and work on any platform because of the ever changing needs and requirements

- •Initial Server setup and on going maintenance needs to be done by qualified staff who are versed in security requirements

- •New Web Server vulnerabilities show up every day for both Unix and NT. There needs to be a dedicated staff performing patches

•Recommended Potential Solutions:

- •Standard software language

- •Integrated Software Development Tools

- •Portability

- •Server Security

•Recommended standard software language:

•Recommend JSP and PHP technologies which are designed to be both platform and server independent.

•Both qualify to provide a quality web product that performs well in a cross platform environment.

•Both easily connect to databases (Oracle, MySql, Postgress, Access) using JDBC. The Lab is currently embracing JSP as product of choice.

- **Recommended Integrated Software Development Tool:**

    - Integrated Software Development Tools are now available for JSP, PHP and ASP:

        - DreamWeaver UltraDev

        - JRun Studio

        - WebGain Studio.

    - DreamWeaver is the development tool of choice, but again this is a matter of preference. The Lab currently offers courses in DreamWeaver.

   - Allows for a tracking method for proper user license control

• Recommended Portability:

- A Portable application provides the flexibility to migrate servers and swap tools, as business needs change.

- Portability enables developers to share their work with a wider audience.

- Java Server Pages technology offers reuse on any platform and on any server.

- Cross-platform support is a strength in JSP.

- For NT platforms, JSP is still recommended because Active Server Pages (ASP) is a Microsoft NT Server only approach.

• Recommended Server Security:

- Servers are extremely vulnerable to attack if not maintained consistently. There have been a number of Unix security breaches at LBNL. (e.g. the Red Team)

- Maintain a Lab maintained Web Site where the user community can go to access the current security patches and vulnerability information for both NT and Unix servers.

- Recommend using the Labs existing Web hosting facilities to ensure security and reliable backup.

- For those who opt to Host their own sites, they can access the Labs Web Site for the current security patches and vulnerability information for both NT and Unix servers. They can also use the Labs backup services.
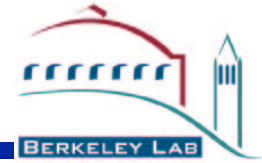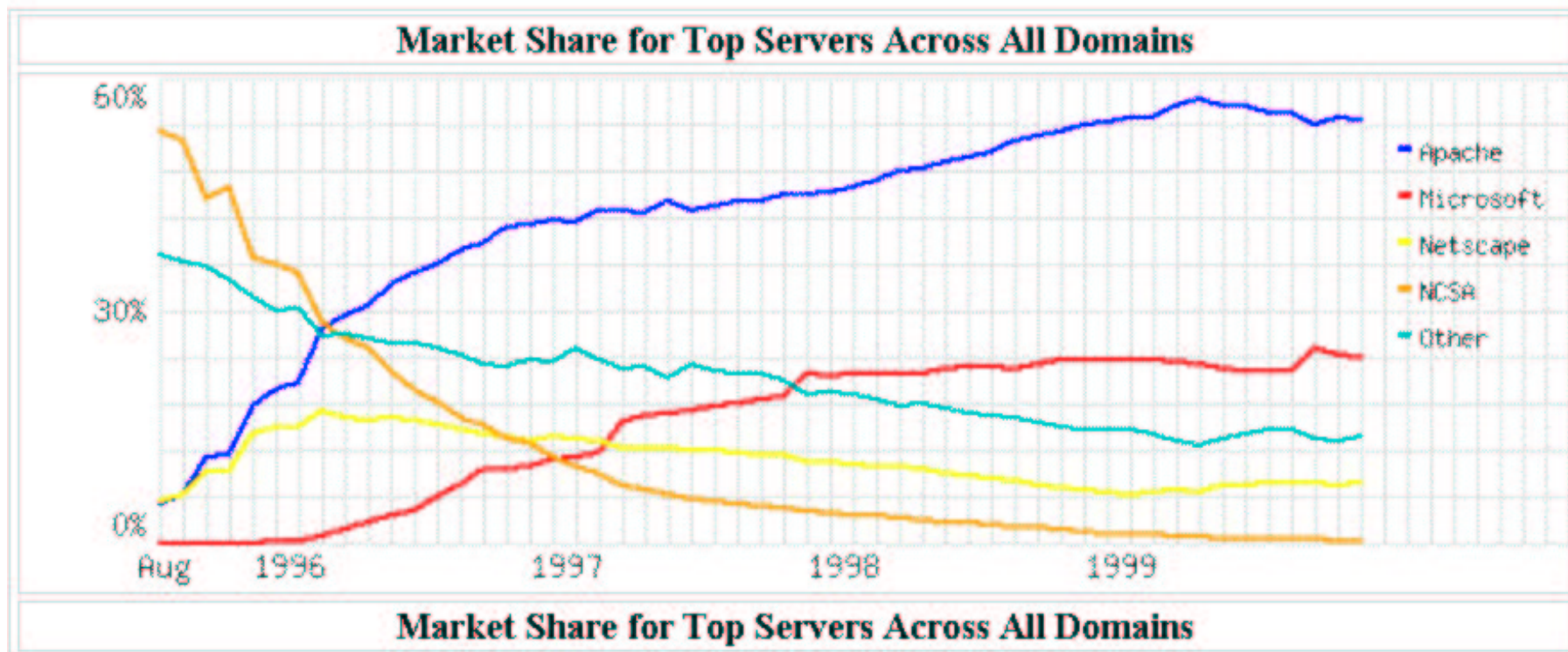
- **Recommended Web Server:**

    - Recommend using Apache Web Server. Unix servers with an Apache Web Server still own 50% of the market share. Apache also works on NT.

•The open source Apache software leads the web server market with approximately 50% of the publicly accessible web sites:

Market Share for Top Servers Across All Domains

- Apache
- Microsoft
- Netscape
- NCSA
- Other

Market Share for Top Servers Across All Domains

·What is needed to support the recommendations?

Languages: JSP, PHP

      Who Provides Training and Support?

Web Platform: Unix & Linux and maybe NT

      Who Provides the web platform? (Central Platform for all to use?)

      Who Provides the Security?   (Who funds the Security Web Page?)

      Who Provides the Support?

Database Access: Oracle, MySQL, Postgress, MS Access

      Who Provides Training and Support?

How does the Lab Infrastructure fit in?   (Currently setup to host)